

AMENDMENTS TO THE CLAIMS

1-54 (Canceled).

55. (New) A rewinding machine comprising a winding system, a feed path for feeding a web material towards said winding system, a counter surface along which said web material runs, and at least one suction member positioned along said feed path to temporarily obstruct feed of the web material and cause interruption thereof at an end of winding of each log, wherein said at least one suction member and said counter surface are constructed and arranged to generate a friction between the web material and said counter surface which causes breakage of said web material by tearing.

56. (New) The rewinding machine as claimed in claim 55, wherein said winding system is a surface winding system comprising a winding cradle.

57. (New) The rewinding machine as claimed in claim 55, wherein said at least one suction member is in a substantially fixed position.

58. (New) The rewinding machine as claimed in claim 55, wherein said at least one suction member is movable at a substantially different speed from a feed speed of the web material.

59. (New) The rewinding machine as claimed in claim 56, further comprising a winding core feeder constructed and arranged to feed winding cores into an insertion path towards said winding cradle.

60. (New) The rewinding machine as claimed in claim 59, wherein positioned along said insertion path is at least one winding core feed member which moves forward at a speed substantially equal to a speed of the web material.

61. (New) The rewinding machine as claimed in claim 60, wherein positioned along said insertion path is a rolling surface for said cores which forms with said at least one core feed member an insertion channel for the winding cores.

62. (New) The rewinding machine as claimed in claim 61, wherein said rolling surface and said at least one core feed member are arranged so that the web material is fed between a core and the at least one core feed member when the core is in said insertion path.

63. (New) The rewinding machine as claimed in claim 55, wherein said winding system is a surface winding system including a first winding roller and a second winding roller defining a nip therebetween, and wherein said at least one suction member is arranged upstream of said nip with respect to a feed direction of said web material.

64. (New) The rewinding machine as claimed in claim 55, wherein provided along said counter surface is at least one suction aperture extending in a direction crosswise to a feed direction of the web material.

65. (New) The rewinding machine as claimed in claim 60, wherein said at least one core feed member feeds cores along said counter surface.

66. (New) The rewinding machine as claimed in claim 61, wherein said counter surface is opposed to said rolling surface, cores being inserted between said counter surface and said rolling surface such that the web material is positioned between the cores and the counter surface.

67. (New) The rewinding machine as claimed in claim 55, wherein said counter surface is a fixed surface.

68. (New) The rewinding machine as claimed in claim 60, wherein said at least one core feed member comprises at least one flexible member running along said counter surface.

69. (New) The rewinding machine as claimed in claim 55, wherein said at least one suction member comprises a sliding valve providing opening and closing of suction holes via which said at least one suction member applies suction on said web material, said sliding valve being activated in

connection with a switchover phase of a winding cycle performed by said rewinding machine.

70. (New) The rewinding machine as claimed in claim 55, further comprising a first winding roller around which at least one flexible member runs with which the web material fed to said winding cradle is in contact and in which said at least one suction member is combined with said flexible member presenting said counter surface, the flexible member moving along said counter surface.

71. (New) The rewinding machine as claimed in claim 70, further comprising a second winding roller defining with said first winding roller a nip for passage of the web material.

72. (New) The rewinding machine as claimed in claim 71, wherein said nip is positioned substantially at an end of said insertion path of the winding cores.

73. (New) The rewinding machine as claimed in claim 59, wherein said insertion path is substantially rectilinear.

74. (New) The rewinding machine as claimed in claim 72, wherein said insertion path, said nip and said first winding roller and said second winding roller are constructed and arranged so that the winding core moves in a substantially rectilinear direction along said insertion

path and during a winding phase in contact with said first winding roller and said second winding roller.

75. (New) The rewinding machine as claimed in claim 55, wherein said at least one suction member includes at least one aperture crosswise to a feed direction of the web material.

76. (New) The rewinding machine as claimed in claim 75, wherein said at least one aperture communicates with a timed suction chamber which is structured for connection to a suction source.

77. (New) The rewinding machine as claimed in claim 76, wherein said timed suction chamber is structured for connection by an opening and closing member to a continuous suction chamber where a substantially continuous underpressure is maintained.

78. (New) The rewinding machine as claimed in claim 77, wherein said opening and closing member comprises a sliding plate provided with a plurality of apertures, wherein said plate is positioned so that said apertures are aligned or alternatively offset with respect to corresponding apertures in a separation wall between said timed suction chamber and said continuous suction chamber.

79. (New) The rewinding machine as claimed in claim 78, wherein said apertures in the plate and said apertures

in the separation wall have an elongated configuration in the feed direction of the web material.

80. (New) The rewinding machine as claimed in claim 55, further comprising a glue applicator for applying glue on cores.

81. (New) The rewinding machine as claimed in claim 55, further comprising blower nozzles to facilitate winding of a free edge around a winding core.

82. (New) The rewinding machine as claimed in claim 81, further comprising at least one first set of blower nozzles and one second set of blower nozzles arranged upstream and downstream of a suction application area to the web material.

83. (New) The rewinding machine as claimed in claim 82, wherein said first set of blower nozzles and said second set of blower nozzles are arranged on a common side of a core insertion path.

84. (New) The rewinding machine as claimed in claim 82, further comprising a third set of blower nozzles.

85. (New) The rewinding machine as claimed in claim 84, wherein at least one of said first set, said second set or said third set of blower nozzles is oscillating or rotating around an axis crosswise with respect to the feed direction of the web material.

86. (New) The rewinding machine as claimed in claim 84, wherein said third set of blower nozzles is oscillating.

87. (New) The rewinding machine as claimed in claim 84, wherein said third set of blower nozzles is arranged on an opposite side of the core insertion path with respect to said first set of blower nozzles and said second set of blower nozzles.

88. (New) The rewinding machine as claimed in claim 81, wherein no means is provided for applying glue to winding cores, and wherein winding of each log is started by said blower nozzles.

89. (New) The rewinding machine as claimed in claim 59, wherein the insertion path is constructed and arranged so that each core rolls along said insertion path for a distance sufficient to transfer a portion of glue previously applied on said core to a portion of the web material forming a final free edge of the log.

90. Method for producing logs of wound web material comprising

- feeding a web material to a winding system;
- winding a first log of the web material;

– interrupting the web material at an end of winding of said first log, forming a final free edge of said first log and an initial free edge for winding of a second log; wherein said interrupting of the web material is by timed suction which obstructs the feeding of the web material and generates a friction between the web material and a counter surface, said friction causing breakage of said web material.

91. (New) The method as claimed in claim 90, wherein said winding system is a surface winding system comprising a winding cradle.

92. (New) The method as claimed in claim 91, including feeding the web material through a nip formed between a first winding roller and a second winding roller, and applying said timed suction upstream of said nip with respect to a feeding direction of said web material.

93. (New) The method as claimed in claim 90, wherein said counter surface is fixed.

94. (New) The method as claimed in claim 90, wherein said counter surface is movable at a different speed with respect to a feed speed of the web material.

95. (New) The method as claimed in claim 90, including providing at least one suction aperture along said counter surface and applying said timed suction on said web

material when the web material moves along said counter surface.

96. (New) The method as claimed in claim 91, wherein said winding of said logs includes winding of the web material on winding cores, said winding cores being fed along an insertion path towards said winding cradle.

97. (New) The method as claimed in claim 96, wherein said counter surface extends along said insertion path.

98. (New) The method as claimed in claim 96 including moving a winding core along said counter surface with the web material being fed between the counter surface and the winding core, the winding core advancing in contact with the web material at a common feed speed with the web material.

99. (New) The method as claimed in claim 98, including applying said timed suction downstream of a position of said winding core along the insertion path causing said interrupting of the web material downstream of said winding core.

100. (New) The method as claimed in claim 97, including providing a core feed member along said counter surface.

101. (New) The method as claimed in claim 100, including moving said core feed member at a speed

substantially corresponding to a feed speed of the web material.

102. (New) The method as claimed in claim 100, including passing the web material between said feed member and the core which presses the web material against the feed member.

103. (New) The method as claimed in claim 96, including applying glue on said winding cores.

104. (New) The method as claimed in claim 103, wherein said applying of said glue is along at least one longitudinal line on said winding cores.

105. (New) The method as claimed in claim 103, wherein at least a part of said glue is transferred to a portion of the final free edge to serve to close the final free edge of said log.

106. (New) The method as claimed in claim 96, wherein said winding of the web material on the winding cores is by winding of the initial free edge around said winding core which is started or facilitated by one or more jets of air.

107. (New) A log of wound tissue paper without a winding core or a mandrel comprising a central hole, and wherein a first turn of said log is without a fold.

108. (New) A log of wound tissue paper comprising a central winding core to which an initial edge of said paper

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is anchored by glue applied along a longitudinal line,
wherein a first turn of said log is without a fold.